

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

Reply To
ATTN OF: LEED

SUBJECT: Engineering Technical Letter (ETL) 90-5:
Fuel and Lube Oil Bulk Storage Capacity for Emergency Generators

TO: SEE DISTRIBUTION LIST

1. Attached for your information and action is the requirement for minimum-day bulk storage of emergency generators fuel and lube oil.

2. Purpose. This ETL:

a. Is authorized in accordance with AFR 8-7, Air Force Engineering Technical Letters (ETL) dated 9 January 1986, and is to be implemented accordingly.

b. Supersedes AFR 88-15, paragraph 16-63a and all other previous guidance on storage of fuel and lube oil systems.

c. Implements recommendations for fuel and lube oil bulk storage for emergency generators in HQ AFAA Report of Audit, Selected Aspects of the Energy Security Program - Management of Emergency Generators (Project No. 9205215).

3. Effective Date: This ETL is effective immediately for projects in the FY92 and subsequent MILCON Programs.

4. New Guidance. Adequately sized fuel and lube oil storage systems are to be provided as a part of the on-site electric generating plant. Class A plants shall include sufficient bulk storage capacity to operate the plant for a minimum of 30 days at the expected maximum demand or 20 percent of the annual requirement, whichever is largest. Class B and C plants, including individual emergency generator units, shall include enough bulk storage for a minimum of three days at the expected maximum demand, unless otherwise authorized by the Requiring Command in coordination with the Host Command. At remote locations, a 30-day or greater fuel supply is acceptable regardless of the class of the plant. Permanently installed (RPIE) Class C engines, housed in the open, but within their own protective shelter, shall have a day tank sized as in Table 16-5. All other plant configurations shall have a day tank for each engine to allow for 10 hours (at expected maximum demand) of operation and shall follow NFPA installation criteria, if located inside the plant.

a. Aircraft Hydrant Fueling Systems. Fuel storage tanks of any size are not required for emergency diesel generator sets that are used to provide power for pumps in aircraft hydrant fueling systems handling JP-8. The generator day tanks are filled directly from the aircraft fuel storage and supply is essentially unlimited.

b. JP-8 Warning. Where JP-8 vs DF-2 is used as the primary fuel, once the temperature in the day tank rises above 100 degrees Fahrenheit (the flash point of JP-8), the fuel's volatility becomes similar to JP-4 or gasoline. In any location where JP-8 is used as the primary fuel and the temperature may normally exceed 100 degrees Fahrenheit (2.5% dry bulb temperature exceeds 97 degrees Fahrenheit per AFM 88-29, Chp 1), electrical hardware must comply with the requirements of NFPA 70 Class I Division II.

5. The point of contact is Mr. R. S. Fernandez at AV 297-4083 or (202) 767-4083.

FOR THE CHIEF OF STAFF

BENTON L. BORDEN, GM-15, USAF
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ENGINEERING TECHNICAL LETTERS (ETL)

SECTION A - CURRENT ETLs

ETL Number	Title	Date Issued
82-2	Energy efficient Equipment	10 Nov 82
83-1	Design of Control Systems for HVAC	16 Feb 83
	Change No. 1 to ETL 83-1, U.S. Air Force Standardized Heating, Ventilating & Air Conditioning (HVAC) Control Systems	22 Jul 87
83-3	Interior Wiring Systems, AFM 88-15	2 Mar 83
	Para 7-3	
83-4	EMCS Data Transmission Media (DTM) Considerations	3 Apr 83
83-7	Plumbing, AFM 88-8, Chapter 4	30 Aug 83
83-8	Use of Air-to-Air Unitary Heat Pumps	15 Sep 83
83-9	Insulation	14 Nov 83
84-2	Computer Energy Analysis	27 Mar 84
	Change 1 Ref: HQ USAF/LEEEU Msg 031600Z MAY 84	1 Jun 84
84-7	MCP Energy Conservation Investment Program (ECIP)	13 Jun 84
84-10	Air Force Building Construction and the Use of Termiticides	1 Aug 84
86-2	Energy Management and Control Systems (EMCS)	5 Feb 86
86-4	Paints and Protective Coatings	12 May 86
86-5	Fuels Use Criteria for Air Force Construction	22 May 86
86-8	Aqueous Film Forming Foam Waste Discharge Retention and Disposal	4 Jun 86
86-9	Lodging Facility Design Guide	4 Jun 86
86-10	Antiterrorism Planning and Design Guidance	13 Jun 86
86-14	Solar Applications	15 Oct 86
86-16	Direct Digital Control Heating Ventilation and Air Conditioning Systems	9 Dec 86
87-1	Lead Ban Requirements of Drinking Water	15 Jan 87
87-2	Volatile Organic Compounds	4 Mar 87
87-4	Energy Budget Figures (EBFS) for Facilities in the Military Construction Program	13 Mar 87
87-5	Utility Meters in New and Renovated Facilities	13 Jul 87
87-9	Prewiring	21 Oct 87

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88-2	Photovoltaic Applications	21 Jan 88
88-3	Design Standards for Critical Facilities	15 Jun 88
88-4	Reliability & Maintainability (R&M) Design Checklist	24 Jun 88
88-5	Cathodic Protection	2 Aug 88
88-6	Heat Distribution Systems Outside of Buildings	1 Aug 88
88-7	TEMPEST & High Altitude Electromagnetic Pulse (HEMP) Protection for Facilities	24 Aug 88
88-8	Chlorofluorocarbon (CFC) Limitation in Heating, Ventilating and Air-Conditioning (HVAC) Systems	4 Oct 88
88-9	Radon Reduction in New Facility Construction	7 Oct 88
88-10	Prewired Workstations Guide Specification	29 Dec 88
89-1	1988 Energy Prices and Discount Factors for Life-Cycle Cost Analysis	6 Feb 89
89-2	Standard Guidelines for Submission of Facility Operating and Maintenance Manuals	23 May 89
89-3	Facility Fire Protection Criteria for Electronic Equipment Installations	9 Jun 89
89-4	Systems Furniture Guide Specification	6 Jul 89
89-5	Air Force Interior Design Policy	not yet
89-6	Power Conditioning and Continuation Interfacing Equipment (PCCIE) in the Military Construction Program (MCP)	7 Sep 89
89-7	Design of Air Force Courtrooms	29 Sep 89
90-1	Built-Up Roof (BUR) Repair/Replacement Guide Specification	23 Jan 90
90-2	General Policy for Prewired Workstations and Systems Furniture	26 Jan 90
90-3	TEMPEST Protection for Facilities Change 1 Ref: HQ USAF/LEEDE Ltr dated 20 April 90, Same Subject	20 Apr 90
90-4	1990 Energy Prices and Discount Factors for Life-Cycle Cost Analysis	24 May 90
90-5	Fuel and Lube Oil Bulk Storage Capacity for Emergency Generators	26 July 90

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SECTION B - OBSOLETE ETLs

No.	Date	Status
82-1	10 Nov 82	Superseded by ETL 83-10, 86-1, 87-4
82-3	10 Nov 82	Superseded by ETL 83-5, 84-2
82-4	10 Nov 82	Superseded by ETL 84-7
82-S	10 Nov 82	Superseded by ETL 84-1, 86-13, 86-14
82-6	30 Dec 82	Cancel I ed
82-7	30 Nov 82	Cancel I ed
83-2	16 Feb 83	Superseded by ETL 84-3
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84-3	21 Mar 84	Cancel I ed
84-4	10 Apr 84	Superseded by ETL 86-7, 86-15, 87-5
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84-9	5 Jul 84	Superseded by ETL 88-7
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